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Comparative efficacy of two Ivermectin Pour-on anthelmintics in beef steers in a commercial feedyard

Abstract

Generic products generally have a cost advantage for beef producers over brand-name products. Recently, many beef producers have debated whether to utilize generic anthelmintics in cow/calf herds and feeder cattle. If generics are to be justified, the products must be proven to have efficacy similar to the brand-name product. Previous studies have indicated that generic macrocyclic lactones are less effective in controlling gastrointestinal parasites of cattle than the original brand-name products. The objective of this study was to compare the efficacy of Vetrimec (Norbrook Laboratories Limited, Newry, Co. Down, Northern Ireland) pour-on and Ivomec (Merial Animal Health, Duluth, GA) pour-on by utilizing the fecal egg reduction test in newly arrived feedlot steers.

Keywords

Cattlemen's Day, 2012; Kansas Agricultural Experiment Station contribution; no. 12-231-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 1065; Beef Cattle Research, 2012 is known as Cattlemen's Day, 2012; Beef; Ivermectin Pour-on; Feedlot; Anthelmintics

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Comparative Efficacy of Two Ivermectin Pour-on Anthelmintics in Beef Steers in a Commercial Feedyard

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Introduction

Generic products generally have a cost advantage for beef producers over brand-name products. Recently, many beef producers have debated whether to utilize generic anthelmintics in cow/calf herds and feeder cattle. If generics are to be justified, the products must be proven to have efficacy similar to the brand-name product. Previous studies have indicated that generic macrocyclic lactones are less effective in controlling gastrointestinal parasites of cattle than the original brand-name products. The objective of this study was to compare the efficacy of Vetrimec (Norbrook Laboratories Limited, Newry, Co. Down, Northern Ireland) pour-on and Ivomec (Merial Animal Health, Duluth, GA) pour-on by utilizing the fecal egg reduction test in newly arrived feedlot steers.

Experimental Procedures

Five pairs of feedlot pens containing 40 cattle per pen within a single commercial feedlot were randomly assigned to 1 of 2 anthelmintic treatments: Ivomec pour-on or Vetrimec pour-on. Rectal fecal samples were obtained at the time of initial processing prior to treatment on day 0 and again on day 14. Animal weights were obtained on day 0 and again at production sort date (average 118 days on feed), at which time the study was terminated.

Linear and mixed models were fit with treatment, pen, and their interaction terms as predictors of net egg count difference and average daily gain using the statistical software program R (version 2.10.1). Fecal egg count reduction percentages were calculated and used to report treatment efficacy.

Results and Discussion

No anthelmintic treatment × pen interactions occurred for fecal egg count reduction percentages or performance. Treatment groups exhibited no differences in pre-treatment body weights ($P = 0.10$; Table 1) or initial fecal egg counts ($P = 0.17$; Figure 1). Cattle treated with Vetrimec pour-on exhibited greater average daily gain than cattle treated with Ivomec pour-on (3.89 versus 3.74 lb/day, respectively; $P = 0.02$). Final (d 14) egg counts did not differ ($P = 0.15$). Regardless of treatment, only 26% of animals sampled had a fecal egg count reduction percentage of >90% at day 14 (Figure 2).

No differences were observed in parasite control between generic and brand-name products in this study, but neither treatment was entirely effective at reducing internal parasite burden.

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Implications

Pour-on anthelmintics may not be the most effective means for control of internal parasites.

Table 1. Initial weight, final weight (day 118), and average daily gain for feedlot cattle treated with either Vetrimec pour-on or Ivomec pour-on

	Vetrimec	Ivomec	SEM	*P*-value
Initial weight, lb	672	680	9.1	0.10
Out weight, lb	1,121	1,108	10.6	0.46
Average daily gain, lb/day	3.89	3.74	0.056	0.02

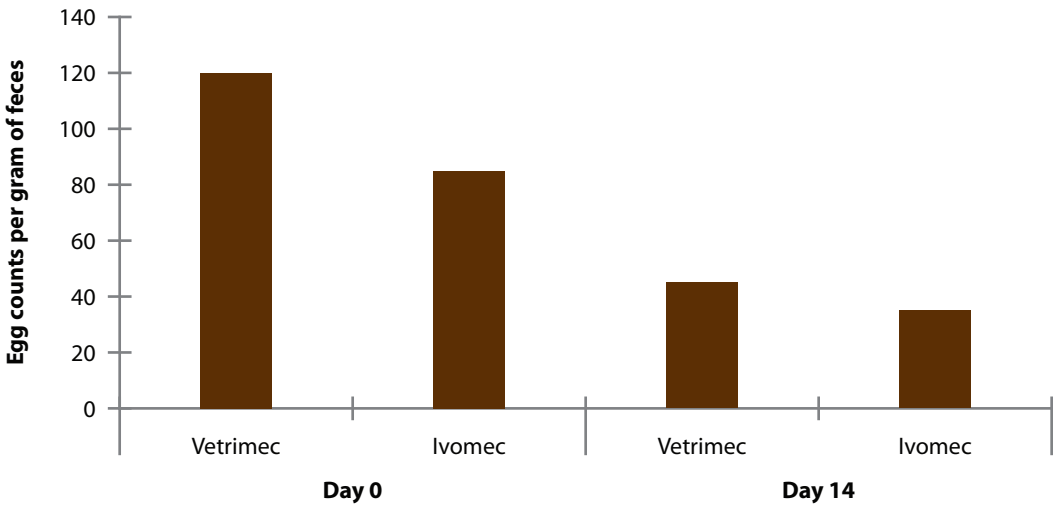

Figure 1. Average fecal egg counts for feedlot cattle treated with either Vetrimec pour-on or Ivomec pour-on (no treatment differences either before or after treatment ($P \geq 0.15$).

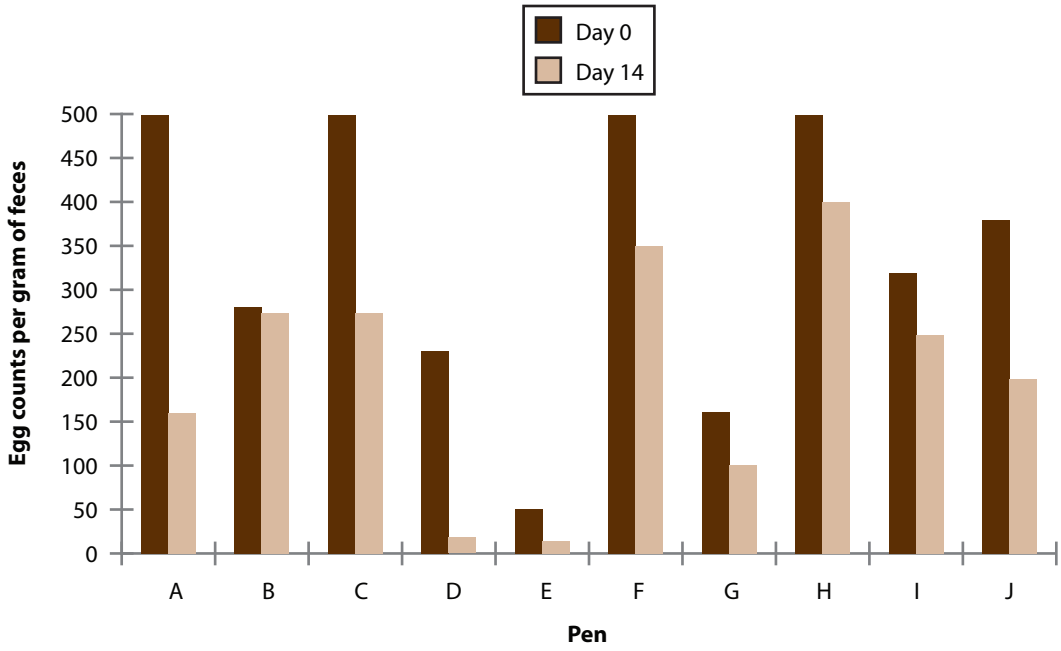

Figure 2. Range (high to low) in individual animal fecal egg counts by pen before and after treatment with either Vetrimec pour-on or Ivomec pour-on.